Control the export of gallium and germanium, don't just talk about it “countermeasures”, the pattern must be opened

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- **Chen Jing: Control the export of gallium and germanium, don't just talk about it “countermeasures”, the pattern must be opened**

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【Text/Observer.com columnist Chen Jing】

On July 3, China’s Ministry of Commerce and General Administration of Customs issued an announcement announcing the implementation of export controls on gallium and germanium-related items.

This action has provoked an unprecedented response from many countries. For example, the U.S. Department of Commerce stated its position “firmly opposed”, as if it had taken the wrong script; the governments of Japan, the Netherlands, South Korea, and Germany spoke one after another, and companies such as American AXT and German Infineon also responded.

The technological war seems to have hit the periodic table, and many people learned a lot of key information about crops and germanium overnight.

Numerous outside comments interpreted this action as “counter-attack”, and the author believes that everyone's pattern needs to be opened.

China accounts for about half of the world's production capacity of many industrial products, including metals, and some even account for more than 90%. This is China's huge contribution to the global economy, which strongly supports the production of various industrial categories such as semiconductors. With the development of the economy and science and technology, China's own demand for some rare resource varieties is also rising. It is both normal and necessary to carry out export controls. Whether there is an economic struggle or not should be introduced.

And the outside world often accuses and lacks respect for China's economic development, ignores China's huge contribution, and thinks that many high-quality and low-priced industrial products are in vain, and also wants to lower prices. The truth is that only China in the world can perfectly solve the supply problems of many industrial products based on huge production capacity and a complete industrial system, which is difficult for foreign countries to do.

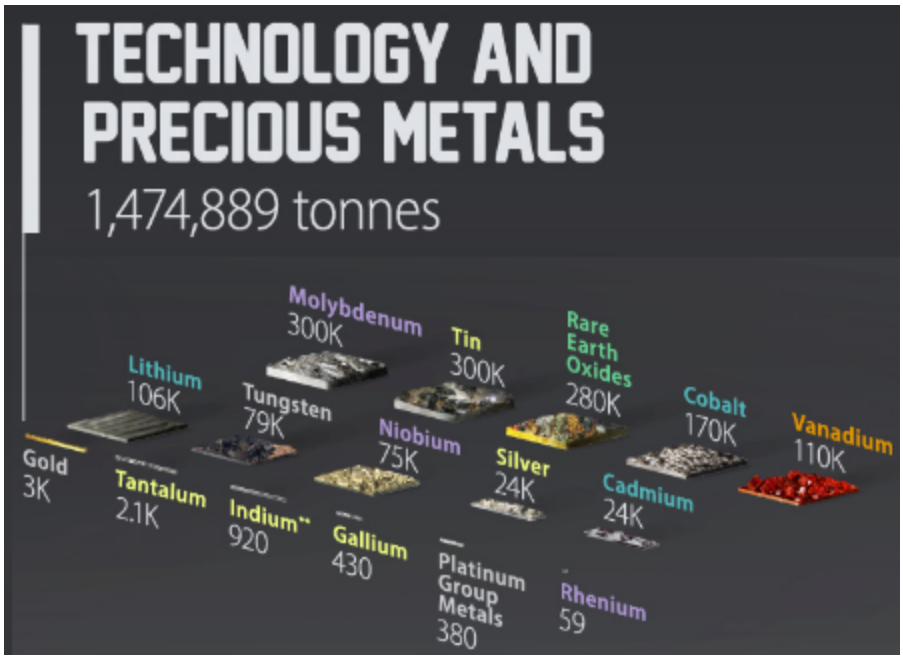
After the export control of "rare earth, gallium, germanium and other items" was implemented, it was shown that the control measures can quickly popularize industry knowledge and help the world recognize China's strength and contribution. Therefore, the author suggests that more areas in which China has made a huge contribution should be evaluated and more control mechanisms introduced, and that no contribution should be made without making a sound.

Global metal production profile

The metals dug out around the world in 2021 are basically on this map, with a total of less than 2.8 billion tons.

The largest block on the left is iron ore, 2.6 billion tons. The scale of this picture is intuitive. A small brick is 1 million tons, each layer is 100 million tons, a total of 26 layers. Iron ore accounted for 93.5% of all metal production; industrial metals 181.6 million tonnes, or 6.5%; and technical and rare metals 1.475 million tonnes, or only 0.05%, but very important.

The second pile is industrial metals, 68 million tons of aluminum, 41 million tons of chromium, 21 million tons of copper, 20 million tons of manganese, 13 million tons of zinc, 9 million tons of titanium, 4.3 million tons of lead, 2.7 million tons of nickel, 1.2 million tons of zirconium, 950,000 tons of magnesium, 360,000 tons of strontium, 48,300 tons of uranium, 19,000 tons of bismuth, 2,300 tons of mercury, and 260 tons of beryllium.



The third pile is technical and rare metals, 300,000 tons of molybdenum, 300,000 tons of tin, 280,000 tons of rare earths, 170,000 tons of cobalt, 110,000 tons of vanadium, 106,000 tons of lithium, 79,000 tons of tungsten, 75,000 tons of niobium, 24,000 tons of silver, 24,000 tons

of cadmium, 3,000 tons of gold, 2,100 tons of thallium, 920 tons of indium, 430 tons of gallium, and 380 tons of platinum group metals 178 tons of germanium (missed in the figure) and 59 tons of rhenium.

Iron ore, chromium, manganese, zinc, nickel, vanadium are used in iron and steel smelting. Aluminum and copper are mainly used in the construction industry. Titanium, zirconium, mercury and bismuth are mainly used in chemical industry, such as pipelines. Alloy additives are magnesium, molybdenum, beryllium, niobium, and rhenium. Lead, uranium, lithium, cobalt, cadmium for the battery industry. Rare earth metal and strontium should be used for permanent magnet components. Tin, silver, thallium, indium, gallium, and germanium are used in electronic products.

All metals except iron, chromium and manganese are called non-ferrous metals in our country. In 2022, my country's output of the top ten non-ferrous metals will be 67.743 million tons, while the global output will be approximately 120 million tons, with China accounting for 56%. The two most prolific non-ferrous metals are aluminum and copper: in 2022, my country produced 81.862 million tons of alumina, accounting for 59% of the world's 139 million tons; in 2022, China produced 11.062 million tons of refined copper, accounting for 43.1% of the world's total, which is equivalent to the sum of the remaining top 12. It can be said that China is the absolute big producer of non-ferrous metals with higher production.

In 2022, China will only account for about 16% of global oil consumption, but will account for 40% of the global petrochemical industry. It is expected to reach half in 2030. It is characterized by deep refining and chemical consumption, full utilization of components, and a long industrial chain. In 2022, China's raw coal production will be 4.5 billion tons, accounting for 51% of the world's 8.8 billion tons; in 2022, China's industrial silicon production capacity will be 6.308 million tons, accounting for 81% of the world's total.

From the point of view of industrial production, China dominates the elements on the periodic table that are used more industrially. To put it simply, occupying half of the country, some are dominant, some not are still trying hard.

So, what is the situation with the more scarce elements?
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Whistleblowing

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This article represents the author's personal opinion only.

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